



Academic Junior High Decathlon 2008-2009

Logic Quiz, Super Quiz and Individual Subject Area Study Guides

Logic Quiz

The Logic Quiz will include questions relative to verbal and mathematical logic. The test will consist of questions valued at a total of 8,000 points. This is a team event.

Optional resources for this event include:

Mensa Guide to Solving Sudoku : Hundreds of Puzzles Plus Techniques to Help You Crack Them All

Editors: Peter Gordon and Frank Longo

Publisher: Sterling Publishing

Publication Date: August 2006

ISBN-13: 9781402740114

The Great Book Of Mind Teasers & Mind Puzzlers

Author: George J. Summers

Publisher: Sterling Publishing

Publication Date: March 1986

ISBN-13: 9780806963204

IQ Challenge: The Fun Way to Sharpen Your Mental Skills

Editor: Deborah Hercun (Editor)

Publisher: Barnes & Noble

Publication Date: October 2004

ISBN-13: 9780760759561

Super Quiz

The Super Quiz is a fifty (50) question oral examination that includes five sections of subject matter. Each of the five sections will consist of 10 questions valued at 160 points each for a grand total of 8,000 points for the Super Quiz. This is a team event.

Social Studies

The social studies questions will relate to the American Civil Rights Movement.

The Civil Rights Movement in American Memory

Author: Renee Christine Romano

Paperback, 382 pages

Publisher: University of Georgia Press

Publication Date: May 30, 2006

ISBN: 0820328146

Literature

The literature questions will relate to the novel Bud Not Buddy written by Christopher Paul Curtis. Students should also know general information about the author.

Bud Not Buddy

Author: Christopher Paul Curtis

Publisher: Random House Children's Books

Publication Date: September 2004

ISBN-13: 9780553494105

Age Range: Young Adult 272pp

Edition Description: First Dell Laurel-Leaf Edition

Winner of the 2000 Newbery Medal

Winner of the 2000 Coretta Scott King Award

Synopsis: Ten-year-old Bud, a motherless boy living in Flint, Michigan, during the Great Depression, escapes a bad foster home and sets out in search of the man he believes to be his father--the renowned bandleader, H.E. Calloway of Grand Rapids.

Religion

The religion questions will focus on the Gospel of John.

Science

The human body contains more than 650 individual muscles which are attached to the skeletal system and allow humans to move. Students should know all of these muscles and the three different types of muscle tissue: skeletal, cardiac, and smooth. Students should also know the differences between voluntary and involuntary muscles.

Anatomy of the Moving Body: A Basic Course in Bones, Muscles, and Joints

Editor: Theodore Dimon

Paperback, 272 pages

Publisher: North Atlantic Books
Publication Date: May 27, 2008
ISBN: 155643720X

Fine Arts

The fine arts test will focus on the Impressionist Claude Monet who lived from 1840 – 1926. Students should study his paintings including the history associated with each painting presented in the book. Students should also study general information about the author's life.

Claude Monet 1840-1926 by Christopher Heinrich

Paperback, 96 pages

Publisher: TASCHEN

Publication Date: May 01, 2000

ISBN: 3822859729

Individual Event Study Guides

The individual event tests will consist of 50 questions. Each test is worth up to a total of 1,000 points.

Current Events

This subject area test will focus on articles found within the *US News and World Report* magazine issues dating from **Monday, November 17, 2008 through Monday, February 23, 2009**. While the magazine has discontinued the classroom program and guide, they continue to offer subscriptions to teachers and schools at a reduced price. The classroom study guides are no longer available with this subscription. Students should independently read each magazine and take notes on the articles related to the United States, the world, health, education, and science (the environment and plants & animals).

- A) Go to <http://www.usnews.com/usnews/classroom/>
- B) Individual subscriptions for Educators and Students are available at a special reduced price of \$12 for one year. Press on “[Click here](#)” for more information.
- C) The current events exam will focus on the weekly magazine from the week of **Monday, November 17, 2008 through Monday, February 23, 2009**.

English

This subject area test will focus on English grammar and the mechanics of writing. Students will be required to identify all parts of speech, types of sentences, and structure of sentences. Students will be required to demonstrate the mechanics of writing including punctuation, capitalization, and spelling.

Fine Arts

The Fine Arts individual subject area test has two parts: Art and Music

Twenty-five questions within the individual fine arts test will cover the history of American art and artists from the eighteenth century to the present. Questions will encompass the visual arts, including painting, photography, and sculpture, and will feature prominent movements.

American Art and Artists: The Ultimate Question and Answer Book

Author: Tricia Wright

Paperback, 218 pages

Publisher: HarperCollins Publishers

Published Date: August 01, 2007

ISBN: 0060891246

Edition: Illustrated

Series: Smithsonian Q and A Series

Twenty-five questions within the individual fine arts test will cover the ragtime jazz and jazz songs sung by Nat King Cole the The Very Best of Nat King Cole (as digitally re-mastered and released in 2006). Questions will relate to the Cole’s biography, the time period in which he performed, and general information about ragtime jazz and jazz music. Research in this area can be done in your local library or on the Internet. No source will be recommended for the

biography, time period, or for general information about ragtime jazz music. Students will also be required to identify songs from this audio CD including the title, and the original recording date.

The Very Best of Nat King Cole

Sung by: Nat King Cole

Audio CD (May 2, 2006)

Original Release Date: May 2, 2006

Number of Discs: 1

Label: Capitol

ASIN: B000F2CAMY

Literature

The individual Literature test will focus on the novel **Elijah of Buxton** written by Christopher Paul Curtis. Students should also know general information about the author.

Elijah of Buxton

Author: Christopher Paul Curtis

Publisher: Gale Group

Publication Date: April 2008

ISBN: 0439023440

Winner of the 2008 Coretta Scott King Author Award

Synopsis of the novel from Amazon.com:

Eleven-year-old Elijah is the first child born into freedom in Buxton, Canada, a settlement of runaway slaves just over the border from Detroit. He's best known in his hometown as the boy who made a memorable impression on Frederick Douglass. But things change when a former slave steals money from Elijah's friend, who has been saving to buy his family out of captivity in the South. Elijah embarks on a dangerous journey to America in pursuit of the thief, and he discovers firsthand the unimaginable horrors of the life his parents fled—a life from which he'll always be free, if he can find the courage to get back home.

Mathematics

The Mathematics subject area test will be based upon the content standards for Algebra I as found at: <http://www.cde.ca.gov/BE/ST/SS/mth/algebra1.asp> . Any Algebra I textbook appropriate for instruction in grade 8 will serve as a resource for this test.

Symbolic reasoning and calculations with symbols are central in algebra. Through the study of algebra, a student develops an understanding of the symbolic language of mathematics and the sciences. In addition, algebraic skills and concepts are developed and used in a wide variety of problem-solving situations.

1.0 Students identify and use the arithmetic properties of subsets of integers and rational, irrational, and real numbers, including closure properties for the four basic arithmetic operations where applicable:

1.1 Students use properties of numbers to demonstrate whether assertions are true or false.

2.0 Students understand and use such operations as taking the opposite, finding the reciprocal, taking a root, and raising to a fractional power. They understand and use the rules of exponents.

3.0 Students solve equations and inequalities involving absolute values.

4.0 Students simplify expressions before solving linear equations and inequalities in one variable, such as $3(2x-5) + 4(x-2) = 12$.

5.0 Students solve multistep problems, including word problems, involving linear equations and linear inequalities in one variable and provide justification for each step.

6.0 Students graph a linear equation and compute the x - and y - intercepts (e.g., graph $2x + 6y = 4$). They are also able to sketch the region defined by linear inequality (e.g., they sketch the region defined by $2x + 6y < 4$).

7.0 Students verify that a point lies on a line, given an equation of the line. Students are able to derive linear equations by using the point-slope formula.

8.0 Students understand the concepts of parallel lines and perpendicular lines and how those slopes are related. Students are able to find the equation of a line perpendicular to a given line that passes through a given point.

9.0 Students solve a system of two linear equations in two variables algebraically and are able to interpret the answer graphically. Students are able to solve a system of two linear inequalities in two variables and to sketch the solution sets.

10.0 Students add, subtract, multiply, and divide monomials and polynomials. Students solve multistep problems, including word problems, by using these techniques.

11.0 Students apply basic factoring techniques to second-and simple third-degree polynomials. These techniques include finding a common factor for all terms in a polynomial, recognizing the difference of two squares, and recognizing perfect squares of binomials.

12.0 Students simplify fractions with polynomials in the numerator and denominator by factoring both and reducing them to the lowest terms.

13.0 Students add, subtract, multiply, and divide rational expressions and functions. Students solve both computationally and conceptually challenging problems by using these techniques.

14.0 Students solve a quadratic equation by factoring or completing the square.

15.0 Students apply algebraic techniques to solve rate problems, work problems, and percent mixture problems.

16.0 Students understand the concepts of a relation and a function, determine whether a given relation defines a function, and give pertinent information about given relations and functions.

17.0 Students determine the domain of independent variables and the range of dependent variables defined by a graph, a set of ordered pairs, or a symbolic expression.

18.0 Students determine whether a relation defined by a graph, a set of ordered pairs, or a symbolic expression is a function and justify the conclusion.

19.0 Students know the quadratic formula and are familiar with its proof by completing the square.

20.0 Students use the quadratic formula to find the roots of a second-degree polynomial and to solve quadratic equations.

21.0 Students graph quadratic functions and know that their roots are the x - intercepts.

22.0 Students use the quadratic formula or factoring techniques or both to determine whether the graph of a quadratic function will intersect the x -axis in zero, one, or two points.

23.0 Students apply quadratic equations to physical problems, such as the motion of an object under the force of gravity.

24.0 Students use and know simple aspects of a logical argument:

24.1 Students explain the difference between inductive and deductive reasoning and identify and provide examples of each.

24.2 Students identify the hypothesis and conclusion in logical deduction. **24.3** Students use counterexamples to show that an assertion is false and recognize that a single counterexample is sufficient to refute an assertion.

25.0 Students use properties of the number system to judge the validity of results, to justify each step of a procedure, and to prove or disprove statements:

25.1 Students use properties of numbers to construct simple, valid arguments (direct and indirect) for, or formulate counterexamples to, claimed assertions.

25.2 Students judge the validity of an argument according to whether the properties of the real number system and the order of operations have been applied correctly at each step.

25.3 Given a specific algebraic statement involving linear, quadratic, or absolute value expressions or equations or inequalities, students determine whether the statement is true sometimes, always, or never.

Religion

The individual subject area test for Religion will focus on the following Church Councils:

The Fifth Lateran Council
The Council of Trent
The First Vatican Council
— The Second Vatican Council

Science

The individual subject area test for Science will focus on the skeletal system of the body including the bones in the body and the tissues such as tendons, ligaments, and cartilage that connects them. The test will also include the teeth, dentin, and enamel. Students should be able to identify bones and their functions. They should also be able to respond to how the skeletal system helps the body function, whether the bones are alive and how the bones break or heal.

Anatomy of the Moving Body: A Basic Course in Bones, Muscles, and Joints

Editor: Theodore Dimon

Paperback, 272 pages

Publisher: North Atlantic Books

Publication Date: May 27, 2008

ISBN: 155643720X

Social Studies

The individual subject area test for Social Studies will focus on a portion of the History-Social Science Content Standards for Grade 8 as they relate to the Civil War.

8.10 Students analyze the multiple causes, key events, and complex consequences of the Civil War.

1. Compare the conflicting interpretations of state and federal authority as emphasized in the speeches and writings of statesmen such as Daniel Webster and John C. Calhoun.
2. Trace the boundaries constituting the North and the South, the geographical differences between the two regions, and the differences between agrarians and industrialists.
3. Identify the constitutional issues posed by the doctrine of nullification and secession and the earliest origins of that doctrine.
4. Discuss Abraham Lincoln's presidency and his significant writings and speeches and their relationship to the Declaration of Independence, such as his "House Divided" speech (1858), Gettysburg Address (1863), Emancipation Proclamation (1863), and inaugural addresses (1861 and 1865).
5. Study the views and lives of leaders (e.g., Ulysses S. Grant, Jefferson Davis, Robert E. Lee) and soldiers on both sides of the war, including those of black soldiers and regiments.

6. Describe critical developments and events in the war, including the major battles, geographical advantages and obstacles, technological advances, and General Lee's surrender at Appomattox.
7. Explain how the war affected combatants, civilians, the physical environment, and future warfare.